AOGS
Acta Obstetricia et Gynecologica Scandinavica

AOGS LETTER TO THE EDITOR

Evidence on the use of tranexamic acid at cesarean delivery

Sir,

We thank Dr. Sentilhes and colleagues for their interest in our publication (1). We agree that the statistical and clinical heterogeneity within the studies is high. However, a random effect model was used to pool data. Under this model we allow that the true effect could vary from study to study. Therefore, even if there is significant heterogeneity between the studies, the weights assigned under random effects are balanced. Regarding the quality of the studies, most of the included trials are judged to be low risk of selection bias and were double-blind.

Regarding the safety of tranexamic acid (TXA), no significant increase in the incidence of thrombotic events related to TXA has been observed in any studies of TXA among pregnant women, including randomized controlled trials (RCTs). Although most of the RCTs included small samples with inadequate power to assess the risk of adverse effects, the meta-analysis pooled data from more than 2000 women. The WOMAN trial (http://www. thewomantrial.lshtm.ac.uk) intends to determine the effect of the early administration of TXA in women with a clinical diagnosis of postpartum hemorrhage. It will have the power to assess severe objective maternal morbidity as well as such severe adverse events as thromboembolic events.

The correlation between TXA administration and acute renal failure due to thrombosis-induced cortical necrosis refers to five published case reports, four of these including patients with risk factors for ischemic renal damage and acute renal cortical necrosis. Moreover, acute renal failure and renal cortical necrosis have been described following severe PPH without any TXA treatment (2). We agree that it would be beneficial to accumulate more data regarding the safety of TXA in pregnancy, but clearly the pregnancy and non-pregnancy data so far are very reassuring, including data on thousands of pregnant women.

The successful use of TXA in various non-obstetric perioperative settings confirms that TXA is both efficacious and safe. Evidence from 211 RCTs (20 781 participants) showed that TXA reduced the risk of blood transfusion and the mean transfused volume, regardless of the type of surgery, including cardiac, orthopedic, hepatic, urological, and vascular (3). Moreover, there was no evidence of an increased risk of thrombotic events. These data should be reassuring to Dr. Sentilhes et al.

There is a clear theoretical rationale for the use of antifibrinolytic agents to reduce postpartum blood loss. In fact, both the coagulation and fibrinolysis processes are implicated in the control of postpartum blood loss, supporting the hypothesis that TXA may be effective in PPH prevention (4). Moreover, the efficacy of TXA in menorrhagia suggests that it can reduce uterine blood loss, even of low volume and in a nonsurgical context (5).

Overall, while we understand Sentilhes et al.'s concern, we would like the reader to concentrate on the large amount of data already published showing the safety and efficacy of TXA for prevention of postpartum hemorrhage at cesarean delivery. The time has arrived for better prevention of one of the biggest killers of pregnant women around the world.

Giuliana Simonazzi[1], Gabriele Saccone[2] and Vincenzo Berghella[3,*]

[1]*Department of Medical Surgical Sciences, Division of Obstetrics and Prenatal Medicine, St. Orsola Malpighi Hospital, University of Bologna, Bologna,* [2]*Department of Neuroscience, Reproductive Sciences and Dentistry, School of Medicine, University of Naples Federico II, Naples, Italy and* [3]*Department of Obstetrics and Gynecology, Division of Maternal-Fetal Medicine, Thomas Jefferson University Hospital, Philadelphia, PA, USA*

Corresponding Author:
Vincenzo Berghella

E-mail: vincenzo.berghella@jefferson.edu

DOI: 10.1111/aogs.12889

References

1. Simonazzi G, Bisulli M, Saccone G, Moro E, Marshall A, Berghella V. Tranexmiac acid for preventing postpartum blood loss after cesarean delivery: a systematic review and meta-analysis of randomized controlled trials. Acta Obstet Gynecol Scand. 2016;95:28–37.
2. Sentilhes L, Lasocki S, Ducloy-Bouthors AS, Deruelle P, Perrotin F, Goffinet F, et al. Tranexamic acid for the prevention and treatment of post-partum hemorrhage. Br J Anaesth. 2015;114:576–87.
3. Henry DA, Carless PA, Moxey AJ, O'Connell D, Stokes BJ, McClelland B, et al. Anti-fibrinolytic use for minimising perioperative allogeneic blood transfusion. Cochrane Database Syst Rev. 2007;(4):CD001886.
4. Cortet M, Deneux-Tharaux C, Dupont C, Colin C, Rudigoz RC, Bouvier-Colle MH, et al. Association between fibrinogen level and severity of postpartum haemorrhage: secondary analysis of a prospective trial. Br J Anaesth. 2012;108:984–9.
5. Matteson KA, Rahn DD, Wheeler TL II, Casiano E, Siddiqui NY, Harvie HS, et al. Nonsurgical management of heavy menstrual bleeding: a systematic review. Obstet Gynecol. 2013;121:632–43.

